USMLE Step 2 - Gastrointestinal and Nutrition

(Last Updated: Apr 11 2025)

While preparing for the USMLE, it is crucial to focus on clinical vignettes.
Diseases can present in various ways, but the USMLE consistently tests certain specific patterns and presentations.
Understanding these patterns and practicing vignettes extensively will significantly enhance your performance on the exam.

- Dr Mohammed Zaki

https://chat.whatsapp.com/L6dShASc3f97cwHZgCD6Xo

Normal structure and function of the GI tract

Constipation

8955
If you see a toddler with painful hard stools, stool withholding, and a fissure after toilet training
then think functional constipation.

Neonatal jaundice

2475
If you see a 2–4 day old full-term baby with indirect hyperbilirubinemia, normal labs, Asian ethnicity, and no red flags
then think physiologic jaundice from ↓ bilirubin clearance.

Congenital and developmental anomalies

Biliary atresia

3970
If you see a 2–8 week old infant with jaundice, hepatomegaly, pale stools, and direct hyperbilirubinemia
then think biliary atresia.

Meckel diverticulum

4838
If you see a toddler with painless rectal bleeding, no fever, no distress, and anemia
then think Meckel diverticulum and order a Meckel scan.

15592
If you see a toddler with recurrent intussusception + iron deficiency anemia
then think Meckel diverticulum. Confirm with a Meckel scan.

Volvulus

2465
If you see bilious vomiting in a neonate + no peritonitis + normal initial x-ray
then think malrotation with volvulus → get an upper GI series immediately.

20406
If you see an infant presents with bilious vomiting + a history of abdominal wall defects (like omphalocele)
then suspect intestinal malrotation ± intermittent volvulus.

Vascular ring

16101
If you see a toddler has dysphagia to solids, recurrent pneumonia, posterior esophageal compression at T4, and failure to thrive
then think vascular ring (congenital aortic arch anomaly).

Tracheoesophageal fistula

17593
If you see a newborn has choking/coughing with feeds + copious oral secretions + respiratory distress
then think TEF/EA → confirm with NG tube placement.

Umbilical hernia

2476
If a newborn has a soft, skin-covered mass at the umbilicus that increases with crying and is easily reducible
then think congenital umbilical hernia → observe.

Biliary tract disorders

Biliary cyst

2945
If a child has a RUQ mass, jaundice, and signs of pancreatitis — and imaging shows a cystic lesion in the biliary tree
then think biliary cyst (choledochal cyst).

21105
If a neonate has jaundice, acholic stools, dark urine, and a palpable RUQ or subhepatic mass
then think biliary cyst.

21114
If you see: *A child with asymptomatic RUQ mass, normal labs, and imaging-confirmed bile duct cyst*
Then think: *Choledochal cyst → resect early to prevent cholangiocarcinoma.*

Cholecystitis

2245
If you see: *Critically ill/trauma patient with RUQ pain, ileus, distended gallbladder without stones on imaging*
Then think: *Acalculous cholecystitis*

2940
If you see: *RUQ pain, fever, leukocytosis + CT shows gas in gallbladder wall, especially in a diabetic or older patient*
Then think: *Emphysematous cholecystitis — emergency cholecystectomy + IV abx (Clostridium coverage)*

2946
If you see: *Postoperative ICU patient with fever, leukocytosis, RUQ tenderness, but normal LFTs*
Then think: *Acalculous cholecystitis — a silent but deadly surgical complication*

4655
If you see: *RUQ pain + fever + positive Murphy sign + thickened GB wall on US*
Then think: *Acute calculous cholecystitis → NPO + IV fluids + early laparoscopic cholecystectomy (<72 hrs)*

16121
If you see: *Intermittent RUQ pain in a pregnant woman (especially obese), worsened by meals, afebrile*
Then think: *Symptomatic cholelithiasis → intermittent cystic duct obstruction = biliary colic*

16129
If you see: *RUQ pain + fever + diabetes + air in GB wall*
Then think: *Emphysematous cholecystitis → needs emergency cholecystectomy + IV antibiotics*

16130
If you see: *RUQ pain >6 hrs, fever, shoulder radiation, +Murphy or guarding, leukocytosis*
Then think: *Acute cholecystitis → start empiric antibiotics (e.g., piperacillin-tazobactam) + plan for cholecystectomy*

Cholangitis

2978
If you see: Fever + jaundice + RUQ pain ± hypotension/AMS + cholestatic LFTs
Then think: Acute cholangitis → biliary obstruction → dilated ducts on imaging

16166
If you see: Fever + RUQ pain + jaundice ± AMS/hypotension + CBD dilation + infection labs
Then think: Acute cholangitis → do ERCP for drainage

16167
If you see: Fever + RUQ pain + AMS/hypotension + direct hyperbilirubinemia
Then think: Acute cholangitis (especially if patient has diabetes or gallstone risk factors)

16170
If you see: RUQ pain + fever + jaundice in a pregnant or obese patient
Then think: Acute cholangitis from choledocholithiasis → confirm with US, treat with ERCP

Cholangiocarcinoma

16099
If you see: Chronic RUQ pain + weight loss + jaundice + intrahepatic bile duct dilation
Then think: Cholangiocarcinoma (especially with UC history or elevated CEA/CA 19-9)

Gallstone disease

2903
If you see: Elderly woman + SBO signs + air in biliary tree
Then think: Gallstone ileus from cholecystoenteric fistula

2930
If you see: Gallstones found incidentally on imaging in a patient with no RUQ pain, fever, or signs of obstruction
Then think: No intervention needed — just educate and observe

2943
If you see: Post-cholecystectomy RUQ pain + cholestatic labs + CBD dilation
Then think: Postcholecystectomy syndrome → ERCP

2973
If you see: Recurrent RUQ pain + post-cholecystectomy + dilated CBD + no stones + opioid-worsened pain
Then think: Sphincter of Oddi Dysfunction (SOD)

2975
If you see: Painless jaundice + dark urine + ↑ direct bili + ↑ ALP
Then think: Cholestasis → Start with abdominal ultrasound

4433
If you see: Epigastric/RUQ pain + shoulder radiation + fatty meal + short duration (<6h) + normal exam
Then think: Biliary colic from transient cystic duct obstruction

16131
If you see: Recurrent postprandial RUQ/Epigastric pain that radiates to back, with normal labs and BMI >30
Then think: Biliary colic → get RUQ ultrasound

Hemobilia

17640
If you see: RUQ pain + jaundice + melena within 1 week of liver biopsy or trauma
Then think: Hemobilia

Hereditary hyperbilirubinemias

2923

If you see: Young, well-appearing patient with scleral icterus + recent stressor (fasting, illness, menstruation) + isolated indirect hyperbilirubinemia
Then think: Gilbert syndrome → no further testing needed

Primary biliary cholangitis

2759
If you see: Middle-aged woman with fatigue, pruritus, mild jaundice, AMA positivity, and cholestasis labs
Then think: PBC → screen for bone loss, supplement vitamin D

2898
If you see: middle-aged woman + fatigue + pruritus + ↑ALP + xanthelasma + normal RUQ US
Then think: Primary Biliary Cholangitis
→ Check anti-mitochondrial antibodies

2950
If you see: middle-aged woman + cholestatic labs (↑ALP) + AMA positive
Then think: PBC confirmed → start ursodeoxycholic acid to delay fibrosis

Porcelain gallbladder

3732
If you see: elderly female + firm RUQ mass + CT with calcified gallbladder wall
Then think: Porcelain gallbladder → risk for gallbladder adenocarcinoma

Disorders of nutrition

Aspiration pneumonia

2212
If you see: elderly patient + choking/coughing with swallowing + stroke/dementia history + RLL pneumonia
Then think: Oropharyngeal dysphagia → Videofluoroscopic barium swallow

Bariatric surgery

16274
If you see: post-Roux-en-Y + progressive postprandial vomiting + solids → liquids + severe reflux
Then think: stomal (GJ) stenosis → get an EGD for balloon dilation

16275
If you see: Early post-op bariatric patient + fever + tachycardia + worsening abdominal pain
Then think: Anastomotic leak → get abdominal CT with oral contrast urgently

16307
If you see: patient with post-bariatric surgery, easy bruising, petechiae, joint effusion, and normal PT/PTT/platelets **Then think:** Vitamin C deficiency (scurvy)

Breastfeeding

2478
If you see: a mother with history of substance use but currently enrolled in a methadone program with no other active drug use **Then think:** No contraindication to breastfeeding → encourage it to reduce neonatal withdrawal symptoms

Celiac disease

2198
If you see: chronic diarrhea + weight loss + steatorrhea + ↓ urinary D-xylose
Then think: Celiac disease = mucosal damage in proximal small bowel

2773
If you see: adolescent with fatigue, iron deficiency anemia, weight loss, and a pruritic rash on extensor surfaces
Then think: Celiac disease → screen with tTG-IgA antibodies

3602
If you see: foul-smelling diarrhea + weight loss + iron-deficiency anemia + villous atrophy
Then think: Celiac disease, even if IgA-based serologies are negative → check total IgA or do duodenal biopsy

16584
If you see: a child with Type 1 diabetes + poor linear growth + iron deficiency + mild GI symptoms
Then think: Celiac disease → order anti-tissue transglutaminase IgA

20396
If you see: young adult with burning peripheral neuropathy, smooth tongue, bloating, and microcytic anemia
Then think: Celiac disease → autoimmune with extraintestinal manifestations

Chemotherapy

18552
If you see: chemo patient + watery, persistent, nocturnal diarrhea + no fever or positive stool studies
Then think: Chemotherapy-related secretory diarrhea → treat with loperamide

Constipation

19352
If you see: 6–12 month infant + recent solids + infrequent hard stools + anal fissure + normal growth
Then think: Functional constipation → treat with prune/pear/apple juice or puree

Dumping syndrome

4062
If you see: recent gastrectomy + post-meal diarrhea, nausea, palpitations
Then think: Dumping syndrome → manage with frequent small meals, low sugar, high fiber

Enteral nutrition

16519
If you see: ICU patient, mechanically ventilated, recent surgery, no signs of gut rupture or ileus
Then think: Start enteral nutrition (even if bowel sounds are absent)

Folic acid deficiency

3086
If you see: older adult + alcohol use + macrocytic anemia + low retics + ↑ homocysteine + normal MMA
Then think: Folate deficiency

Food protein-induced allergic proctocolitis

20691
If you see: well-appearing infant <6 months + loose stools with blood & mucus + breastfed
Then think: FPIAP → first-line: eliminate maternal dairy

Iron deficiency anemia

2479
If you see: preterm + exclusively breastfed infant at <6 months with pallor
Then think: start iron + vitamin D supplementation

21434
If you see: unprocessed, plant-only diet with no supplements
Then think: risk of Vitamin B12 + Vitamin D deficiency
Add: Consider calcium and iron especially in children or menstruating teens

Laxative abuse

3593
If you see: Young woman, healthcare worker, with chronic nocturnal watery diarrhea, metabolic alkalosis, hypokalemia, and melanosis coli on colonoscopy
Then think: Laxative abuse → screen stool for laxatives

Lactose intolerance

3605
If you see: Asian/Black/Native adult + bloating + watery diarrhea after dairy
Then think: Lactose intolerance → confirm with hydrogen breath test

12406
If you see: Cramping, bloating, diarrhea after dairy in Asian/Black/Native adult
Then think: Lactase deficiency → brush border enzyme issue

19782
If you see: Post-infectious abdominal bloating and pain without red flag symptoms
Then think: Transient lactose intolerance → confirm with hydrogen breath test

19783
If you see: A child with worsening diarrhea after recovery from gastroenteritis and reintroduction of dairy
Then think: Secondary lactase deficiency (transient lactose intolerance)

Niacin deficiency

3087
If you see: Rash in sun-exposed areas + watery diarrhea + neuro symptoms (e.g., depression)
Then think: Pellagra (niacin deficiency)
Especially if: Patient is on isoniazid or eats mostly corn

4839
If you see: Crohn + watery diarrhea + neuro symptoms + photosensitive rash on distal limbs/face
Then think: Pellagra (Niacin deficiency)
Especially when the tongue is smooth/red and the rash is sharply demarcated in sun-exposed areas

Obesity

7553
If you see: BMI ≥35 + type 2 diabetes + failed weight loss after 6 months
Then think: Refer for bariatric surgery evaluation

Refeeding Syndrome

16711
If you see: Chronically malnourished patient + feeding resumed + hypophosphatemia, hypokalemia, arrhythmia
Then think: Refeeding syndrome

Riboflavin deficiency

4302
If you see: Malnourished child + cheilitis + red tongue + facial/genital seborrheic rash + anemia
Then think: Vitamin B2 (riboflavin) deficiency

SIBO

3603
If you see: Chronic bloating + flatulence + watery diarrhea (including at night) in a post-gastric bypass patient
Then think: SIBO (Small Intestinal Bacterial Overgrowth)

Thermal burn

19257
If you see: Major burns + stable vitals + no contraindication to feeding
Then think: Early enteral nutrition within 24 hours

Vitamin C deficiency

13534
If you see: Homeless or alcoholic patient + bleeding gums + poor wound healing + skin bruising
Then think: Vitamin C deficiency (Scurvy)
Also look for: anemia, edema, coiled hairs, malaise

Vitamin b12 deficiency

13853
If you see: Tingling + gait issues + ↓ vibration in a PPI user or older adult
Then think: Vitamin B12 deficiency
Next step: Check serum B12 level

Zinc deficiency

3790
If you see: Crohn's disease + parenteral nutrition + perioral crusting rash + alopecia + taste disturbance
Then think: Zinc deficiency

Gastroesophageal disorders

Achalasia

2199
If you see: Dysphagia to both solids & liquids + weight loss + age > 60 + bird-beak esophagus
Then think: *Pseudoachalasia from esophageal cancer —> do upper endoscopy first*

4405
If you see: Dysphagia to solids and liquids + regurgitation + improved when standing + bird-beak esophagus
Then think: *Achalasia — primary motility disorder, rule out pseudoachalasia in older patients*

Anticoagulants

4601
If you see: Peritonitis + warfarin use + INR >2 + emergent surgery planned
Then think: *Reversal of warfarin with PCC and IV vitamin K = urgent priority*

Atrophic gastritis

16898
If you see: Chronic postprandial dyspepsia + hypothyroidism + macrocytic anemia
Then think: *Autoimmune metaplastic atrophic gastritis (AMAG) — parietal cell antibodies → ↓ intrinsic factor*

Breastfeeding

18837
If you see: Infant <6 months old + post-feed vomiting + normal weight gain + no distress
Then think: *Physiologic GER ("happy spitter") → reassure and supplement vitamin D if breastfed*

Diffuse esophageal spasm

2213
If you see: Chest pain with normal ECG + regurgitation + stress/temperature triggers + nitro relief
Then think: *Diffuse esophageal spasm → confirm with esophageal manometry*

4226
If you see: Chest pain episodes + dysphagia to solids and liquids + normal cardiac + normal endoscopy
Then think: *Diffuse esophageal spasm — confirmed by esophageal manometry*

Dyspepsia

3588
If you see: Young-to-middle aged immigrant with dyspepsia, postprandial bloating, nocturnal epigastric pain, and + stool guaiac
Then think: *Helicobacter pylori infection → confirm with stool antigen or urea breath test → treat with triple therapy*

Esophageal Rupture

2335
If you see: Recent endoscopy + acute substernal/back pain + pleural effusion + systemic signs
Then think: *Esophageal perforation — confirm with water-soluble esophagogram → NPO + IV antibiotics + emergent surgery*

2369
If you see: Young patient + post-emesis chest pain + fever, tachycardia, crepitus
Then think: *Boerhaave syndrome (esophageal rupture) — confirm with water-soluble contrast esophagogram → emergency surgery*

4360
If you see: Young adult + post-vomiting chest pain + fever + pleural effusion with high amylase
Then think: *Boerhaave syndrome — esophageal perforation → confirm with contrast esophagogram → surgical emergency*

16178
If you see: Recent esophageal instrumentation (eg, TEE) + severe chest/back pain + fever + widened mediastinum
Then think: *Esophageal perforation → confirm with water-soluble contrast esophagogram → call surgery ASAP*

16185
If you see: Chest trauma + chest tube drainage of green fluid + pleural effusion
Then think: *Esophageal perforation — confirm with water-soluble contrast esophagogram → surgical emergency*

16187
If you see: Recent vomiting (especially self-induced) + chest/back pain + fever + unilateral pleural effusion
Then think: *Boerhaave syndrome — esophageal perforation → confirm with water-soluble esophagogram → emergent surgical consult*

16198
If you see: Repetitive vomiting → chest/back pain + crepitus or Hamman sign
Then think: *Boerhaave syndrome → esophageal rupture → confirm with water-soluble contrast esophagogram → surgery*

Esophagitis

4934
If you see: Sudden chest pain/odynophagia + recent use of potassium, NSAIDs, bisphosphonates, or doxycycline
Then think: *Pill-induced esophagitis → mid-esophageal ulcers on endoscopy → stop offending drug*

13552
If you see: Toddler avoids solids, prefers purees/yogurt + poor weight gain + history of eczema/asthma
Then think: *Eosinophilic esophagitis → confirm with endoscopy + esophageal biopsy (≥15 eos/hpf)*

16190
If you see: Young adult + asthma + intermittent dysphagia (esp. solids) + food sticking + refractory heartburn
Then think: *Eosinophilic esophagitis → endoscopy + biopsy → treat with PPI + swallowed steroids*

Esophageal cancer

16191
If you see: Older adult + progressive dysphagia to solids (not liquids) + GERD history
Then think: *Possible esophageal stricture or adenocarcinoma → order upper endoscopy*

Esophageal varices

2921
If you see: chronic liver disease (eg, palmar erythema, spider angiomas), confirmed cirrhosis on imaging, medium/large nonbleeding esophageal varices on EGD
Then think: Nonselective beta blocker for primary prophylaxis (nadolol/propranolol/carvedilol*)

4386
If you see: cirrhotic patient + hematemesis + signs of portal HTN
Then think: Esophageal variceal bleeding → Start octreotide + antibiotics + prep for endoscopy

Gastric cancer

16143
If you see: elderly patient + weight loss + upper abdominal pain + immigrant from East Asia
Then think: Gastric cancer → do EGD with biopsy

Gastric outlet obstruction

4486
If you see: persistent vomiting of undigested food + early satiety + succussion splash + history of caustic ingestion (6–12 weeks ago)
Then think: Pyloric stricture causing gastric outlet obstruction

Gastroschisis

4290
If you see: second-trimester ↑AFP + free-floating bowel in amniotic sac on ultrasound
Then think: Gastroschisis (abdominal wall defect with no membrane)

GERD

2200
If you see: Long-standing GERD + dysphagia and/or weight loss
Then think: Esophageal cancer/stricture → get upper GI endoscopy

4694
If you see: long-standing GERD + dysphagia to solids only + symmetric narrowing in distal esophagus
Then think: Esophageal stricture (complication of acid-induced fibrosis)

4926
If you see: 0–6 month-old infant + small-volume regurgitation + normal growth + no systemic signs
Then think: Physiologic reflux → reassure, educate, monitor only

GI hemorrhage

4085
If you see: Elderly patient + intermittent painless maroon stools + aortic stenosis or renal disease
Then think: Angiodysplasia, even if prior colonoscopy was "normal"

4303
If you see: Coffee-ground emesis + melena + signs of volume loss
Then think: Upper GI bleeding → expect ↑ BUN/Cr ratio

4927
If you see: cirrhotic patient + ongoing hematemesis + altered mental status
Then think: Secure the airway first → Endotracheal intubation

Gastroparesis

106510
If you see: type 1 diabetic + nausea, early satiety, vomiting, weight loss
Then think: Gastroparesis → order gastric emptying scan

106515
If you see: recent upper GI surgery + early satiety, nausea, postprandial vomiting, weight loss
Then think: Gastroparesis → order gastric emptying scan

Hiatal hernia

15709
If you see: postprandial nausea/vomiting + dysphagia + retrocardiac air-fluid level
Then think: Paraesophageal hiatal hernia (surgical consult often needed)

15710
If you see: incidental finding of sliding hiatal hernia on imaging + no GERD symptoms
Then think: Reassurance and no further testin

Hypertrophic pyloric stenosis

3078
If you see: 3–6-week-old + nonbilious projectile vomiting + hungry post-feed
Then think: Hypertrophic pyloric stenosis → Order ultrasound

3465
If you see: 3–6-week-old + nonbilious projectile vomiting + hypochloremic hypokalemic metabolic alkalosis
Then think: Pyloric stenosis → stabilize first with IV fluids + potassium, then schedule pyloromyotomy

20272
If you see: 3–6-week-old + nonbilious, projectile vomiting after every feed + refeeding attempts
Then think: Hypertrophic pyloric stenosis → next step: abdominal ultrasound

Mallory-weiss syndrome

2203
If you see: recent retching or vomiting + alcohol use + hematemesis with stable vitals
Then think: Mallory-Weiss tear → endoscopy confirms, usually self-limiting

Peptic ulcer disease

3704
If you see: hematemesis + NSAID use + alcohol ± cocaine or stressors
Then think: Acute erosive gastropathy → mucosal injury → superficial bleed

4363
If you see: Epigastric pain worse at night, better with food + melena + no NSAID use
Then think: Duodenal ulcer → most likely due to H. pylori → treat with PPI + antibiotics

Perforated viscus

3178
If you see: Sudden epigastric pain + guarding + subdiaphragmatic free air on chest X-ray
Then think: Perforated peptic ulcer → needs urgent IV fluids, PPI, abx, and surgical consult

12142
If you see NSAID use + upper abdominal pain + guarding + fever, then think PUD with perforation
then confirm with upright chest/abd x-ray.

Stress gastric ulcer

16716
If you see ICU patient with recent sepsis/shock + acute anemia + occult GI bleeding,
then think stress ulceration → manage with PPIs.

Volvulus

20407
If you see a neonate with bilious vomiting + peritonitis or shock →
think midgut volvulus with ischemia → go straight to surgery.

20593
If you see bilious vomiting + distended/quiet abdomen + signs of shock in an infant,
then think malrotation with midgut volvulus → surgical emergency.

Zenker diverticulum

2214
If you see an elderly patient with halitosis, regurgitation of undigested food, and recurrent pneumonia,
then think Zenker diverticulum → confirm with contrast esophagography.

4188
If you see dysphagia, halitosis, regurgitation of undigested food, and aspiration in an older adult,
then think Zenker diverticulum → caused by UES motor dysfunction.

16923
If you see progressive dysphagia, regurgitation of undigested food, and nocturnal symptoms in an older adult with a posterior outpouching on barium study, then think Zenker diverticulum
then treat with cricopharyngeal myotomy.